

# White Paper: Download Managers – A Better Downloading Experience

An in-depth analysis of how download managers help you download content from the internet



Brought to you by the authors of DownloadStudio – the award-winning, multi-featured download manager that gets everything on the web.

Conceiva Pty. Ltd. <http://www.conceiva.com>

# Table of Contents

<b>1. Introduction</b> .....	<b>3</b>
1.1 Key terms.....	4
1.2 Important: Notice about copyright ownership .....	6
<b>2. Various types of content to download</b> .....	<b>7</b>
2.1 Various protocols used on the internet .....	8
<b>3. Key benefits of download managers</b> .....	<b>10</b>
<b>4. Different types of download managers</b> .....	<b>12</b>
4.1 File download managers .....	12
4.2 Multi-featured download managers .....	12
4.3 Criteria for choosing a download manager .....	14
<b>5. How download managers work</b> .....	<b>15</b>
5.1 Accelerating downloads.....	15
5.2 Resuming downloads .....	15
5.3 Scheduling a download for a later time of day .....	16
5.4 Download managers and broadband connections .....	16
<b>6. Techniques for downloading content</b> .....	<b>17</b>
6.1 Downloading a file.....	17
6.2 Downloading Flash Video (FLV) .....	17
6.3 Downloading streaming audio and video .....	18
6.4 Downloading a collection of files .....	19
6.5 Downloading a complete web site or parts of a web site .....	19
6.6 Downloading Flash (SWF) .....	20
6.7 Downloading RSS feeds and podcasts .....	20
<b>7. Integrating download managers into web browsers</b> .....	<b>21</b>
7.1 Click monitoring .....	21
7.2 Right-click menus .....	21
7.3 Download toolbar .....	22
7.4 Drag and drop support.....	22
7.5 Download Flash Video (FLV) .....	22
7.6 Download Flash (SWF).....	23
<b>8. Summary</b> .....	<b>24</b>
<b>9. About DownloadStudio</b> .....	<b>25</b>
<b>10. About Conceiva</b> .....	<b>26</b>

# Download Managers – A Better Downloading Experience

An in-depth analysis of how download managers help you download content from the internet

## 1. Introduction

Downloading content from internet has become a commonplace activity for all internet users – in the home, in business and in schools. All internet users download content from time to time – typically programs, games, flash video, photos, music, video, podcasts, web pages and documents.

Downloading content can be troublesome. Downloads can fail. Downloads can take excessive time. Downloads can be password-protected. Some content cannot be downloaded using your web browser.

A download manager is a utility designed to fix all the problems you may be having downloading content from the internet. They have quickly become a must-have utility for all internet users. Download managers can accelerate your downloads, allow you to resume broken downloads and contain numerous features that allow to you get hard-to-get files from the internet.

Download managers are very popular and are used by millions of internet users. Each week, over one million people install download managers to help them download content from the internet (based on figures from popular internet download sites).

This white paper will explain the benefits of download managers, the different types of download managers, the various types of content on the internet, and how download managers assist you to get this content.

## 1.1 Key terms

It is assumed that you have a reasonable knowledge of the internet when reading this white paper. Several terms used in this white paper are explained below:

### URL

A URL (or Uniform Resource Locator) is the location of a resource on the internet. The format of a URL includes the protocol (e.g. <http://>, <https://>, <ftp://>, <mms://>, <rtsp://>, etc.), the domain name (or IP address), and additional path information (or folder & file name). A URL may address a web page file, a program file, an image file, a CGI file, or any other type of file, folder or program.

Download managers use URLs to find the location of files, web sites and FTP sites that you want to download. You input URLs when download content from the internet. Examples of URLs are:

- <http://www.conceiva.com/downloads/downloadstudio-setup.exe>
- <ftp://ftp.microsoft.com/pub/msoffice.zip>
- <http://www.google.com>
- <http://www.itunes.com/hiphop/newtrack.mp3>

### Servers, Domains and Groups

A server name represents a single web server. For example, "www.conceiva.com" and "www.google.com" are examples of server names. Even "google.com" counts as a different server name since it is not the same as "www.google.com" - even though if you visit "<http://www.google.com>" and "<http://google.com>" in your web browser you may see the same content.

A domain name is the most general part of a server name. For example, "conceiva.com", "google.com" and "zdnet.co.uk" are examples of domain names. When downloading files, if you set the download job to span across Domains, it will download files from any servers that share the same domain name. For example, "www.conceiva.com", "images.conceiva.com" and "downloads.conceiva.com" all belong to the same domain "conceiva.com".

A group name refers to any number of servers that share the same name regardless of the country-specific part of the name. For example, "www.conceiva.net", "ftp.conceiva.org.au" and "images.conceiva.co.jp" would all be part of the same group, because they all contain the word "conceiva" directly before the country-specific part of the name.

Using the URL "<http://www.conceiva.com/images/logo.gif>" as an example:

- "www.conceiva.com/images" is the folder name
- "www.conceiva.com" is the server name
- "conceiva.com" is the domain name
- "conceiva" is the group name

## MIME Type

MIME types are a standard for defining the types of files attached to standard internet mail messages and on web servers. The MIME standard is used by software applications such as web browsers and download managers to communicate with web servers to determine what type of file is being transferred. The MIME type of a file can be a more accurate method of determining the type of a file rather than using the file extension of a file to guess the type of file on a web site.

Examples:

- HTML files have a MIME type of "text/html"
- JPEG files have a MIME type of "image/jpeg"
- Flash Video files have a MIME type of "video/flv"

## RSS feed

RSS feeds have become a popular way for web sites to inform you about its latest news or its latest content. RSS stands for Really Simple Syndication and is an XML based file that contains information and links about content from a web site. Popular RSS feeds are latest headlines from news web sites, latest music titles from music sites, latest company news from business web sites, latest topics from blogs, and more.

## Podcast

Podcasts are RSS feeds that contain information and links to audio and video files. They have become very a popular way to get your favorite music, due mainly to the popularity of portable media players such as Apple's iPod.

## Streaming media

Streaming audio and video is used to view movies and listen to music from the internet. Media players such as Windows Media Player, QuickTime Player and Real One Player are used to play audio and video from streaming media servers. Streaming media servers send audio and video as small packets of data to your media player on your computer. Once played, the packets of data are discarded – so unless you use a download manager like DownloadStudio, you are unable to save the file.

## Flash Video

Flash Video has become a popular way to view videos on the internet – especially from sites like YouTube, Google Video, Dailymotion, Crackle, Vimeo, Metacafe and more. Flash Video is streamed to your computer and played in your web browser using an Adobe Flash plugin. Once played, the packets of data are discarded – so unless you use a download manager like DownloadStudio, you are unable to save the file.

## TCP

The Transmission Control Protocol (TCP) is one of the main protocols used in TCP/IP networks. Whereas the IP protocol deals only with packets, TCP enables two hosts to establish a connection and exchange streams of data. TCP guarantees delivery of data and also guarantees that packets will be delivered in the same order in which they were sent.

### **1.2 Important: Notice about copyright ownership**

Download managers, including DownloadStudio, are designed to assist you to download files from the internet. If you do not own the copyright to these files or do not have permission to copy these files from the copyright owner, you may be violating copyright law and be subject to payment of damages and other remedies. If you are uncertain of your rights, contact your legal advisor.

All examples of downloading that are contained in this White Paper are for illustration purposes only. These URLs (or web site addresses) may or may not exist. The use of the example URLs does not imply that you have consent to download content from them.

## 2. Various types of content to download

The internet has many different types of files and content that you may be interested in downloading. Some popular examples of content are:

- **Programs.** Programs are executable files that usually are downloaded and installed onto your computer. Programs can be large files that take significant bandwidth and time to download.
- **Images & pictures.** Images are located all over the internet on web sites and ftp sites. They are probably the most popular content downloaded by internet users. The popular image file formats are JPEG, GIF and PNG. Images are typically small files (< 100 kilobytes) so that they can be displayed quickly in web browsers. Images can be small thumbnails or larger-sized images. Typically, internet users want to download the larger-sized images.
- **Movies & video.** Video content has become very popular for internet users who have broadband connections. Video content is either streamed onto your computer from a streaming media server into your media player, or it is a file that can be downloaded and then played in your media player. Video content is typically very large in size and can take significant bandwidth and time to download. Video content that is streamed into your media player cannot be downloaded in the traditional file-based manner using your web browser or media player – unless you use a download manager such as DownloadStudio.
- **Music, audio & podcasts.** With the popularity of portable media players, music and audio has become a very popular download for internet users. Audio is either streamed onto your computer from a streaming media server into your media player, or it is a file that can be downloaded and then played in your media player. Podcasts have become a very popular way to subscribe to music and video you are interested in. Podcasts are specialized RSS feed (XML-based) files on the internet that describe and link to a collection of audio or video files. Audio content is typically medium-to-large in size. Audio that is streamed directly into your media player cannot be downloaded in the traditional file-based manner using your web browser or media player – unless you use a download manager such as DownloadStudio.
- **Flash Video.** Adobe Flash Video (.FLV) content has become very popular on internet sites such as YouTube, Google Video, Dailymotion, MySpace, Vimeo, Crackle, Metacafe and more. Flash Video is streamed to your web browser and played in Adobe's Flash plugin. Flash Video cannot be downloaded in the traditional file-based manner using your web browser – unless you use a download manager such as DownloadStudio. Typically, Flash Video content is medium-to-large in size.
- **Flash.** Adobe Flash (.SWF) content is used widely on web sites to enhance sites with a more dynamic presentation. Flash content can be diverse in nature – ads, games, movies, complete web sites and more. Flash content is displayed in your web browser using a Flash plugin. The use of these plugins makes downloading flash content onto your computer difficult – unless you use a download manager such as DownloadStudio. Typically, flash content is small-to-medium in size.

- **RSS feeds.** Really Simple Syndication (RSS) feeds are now being used widely on web sites to provide up-to-the-minute news and information about topics of interest on a web site. RSS feeds are XML based files that describe topics of interest and contain links for internet users to gain more information. Typically, RSS feeds are viewed in RSS readers that are capable of presenting the RSS feed in a well-formatted manner. RSS feeds are typically small files that are updated regularly.
- **Games and game files.** Games are executable files that are usually downloaded and installed onto your computer. Games files are typically extensions or additions to existing games that you have already installed onto your computer. Games are typically large files that take significant bandwidth and time to download.
- **Web sites.** Some internet users often wish to download a complete web site (or certain pages of a web site) so that they can view it later at their convenience. This is called offline browsing. All files for a web site are downloaded and saved onto your computer so that you can view the web site locally on your computer in your web browser. Web site content typically contains many small files.
- **Compressed files.** Compressed files are collections of files that have been compressed to make them smaller to download. Internet users require a program installed on their computer to de-compress the files once downloaded. Popular formats for compressing files are ZIP, TAR and RAR. Typically, compressed files are very large in size and can take significant bandwidth and time to download.
- **Documents.** Document files are often available for download on the internet. Popular document formats are Acrobat PDF files, Word DOC files, Excel XLS files and PowerPoint PPT files. Document files can be large in size, requiring significant bandwidth and time to download.
- **Data files.** An increasing number of businesses download data files from the internet on a daily basis – often as a regular scheduled backup of their online data or to simply get the latest up-to-date data for their business. Data files can be any type of file and can be large in size, requiring significant bandwidth and time to download.

## 2.1 Various protocols used on the internet

Along with different types of content on the internet, there are several standard protocols that are used to access files and content. The popular internet protocols are:

- **http://.** The hypertext transfer protocol is used to access and view web sites and is the most widely-used protocol by internet users. Any type of file may be accessed using this protocol. Example:  
<http://www.example.com/folder/file.zip>.
- **https://.** The secure hypertext transfer protocol is used to access and view web sites. It is often used in e-commerce and where security is important. Any type of file may be accessed using this protocol. Example:  
<https://www.example.com/payment/purchase.php>.



- **ftp://**. The file transfer protocol is one of the oldest protocols still in use today and is used to upload and download files to servers. Example: ftp://ftp.example.com/folder/file.exe.
- **mms://**. The multi-media server protocol is used to connect to Windows media streaming servers so that Windows media streaming audio and video can be played. Valid file types are .WMA, .WMV, .WAX, .WVX, .ASF and .ASX. Example: mms://www.example.com/folder/movie.wmv.
- **rtsp://**. The real-time streaming protocol is used to connect to streaming servers so that streaming audio and video can be played. Valid file types include Real Audio/Video (.RA, .RM), Windows Media (.WMA, .WMV, .WAX, .WVX, .ASF, .ASX) and QuickTime (.QT, .MOV). Example: rtsp://www.example.com/folder/file.rm.

### 3. Key benefits of download managers

The key benefits of download managers when compared to using your web browser to download content are:

- **Accelerated downloading.** Download managers can accelerate your file downloads by up to 500% – even on your broadband connection. Web browsers cannot do this.
- **Resume broken or failed downloads.** Download managers can resume a download where it failed, thus saving you significant time and bandwidth. Most web browsers cannot do this.
- **Schedule downloads for a later date.** Download managers let you schedule downloads for a later time of day, or schedule downloads for regular intervals such as daily or weekly. Web browsers cannot do this.
- **Download or capture streaming audio and video.** Download managers can download (or capture) streaming audio and streaming video so you can save them on your computer. Web browsers and media players cannot do this.
- **Download Flash Video (FLV) and Flash (SWF).** Download managers can download Adobe Flash Video (.FLV) and Adobe Flash (.SWF) onto your computers. Web browsers cannot do this.
- **Download RSS feeds and blogs.** Download managers can subscribe to and download your favorite RSS feeds and blogs. Many web browsers cannot do this.
- **Download podcasts.** Download managers can download podcasts – including all the music and video in the podcast - so you can play it on your computer or transfer it to your portable media player, such as an Apple iPod. Web browsers cannot do this.
- **Download complete web sites.** Download managers can download complete web sites for offline browsing so you can view the web site without being connected to the internet. Web browsers cannot do this.
- **Download specific files from a web site.** Download managers can scan and download specific files from a web site. Web browsers cannot do this.
- **Download a collection of files.** Download managers can download a numeric or alphabetic series of files from a web site, so you can download collections of photos from photo gallery web sites. Web browsers cannot do this.
- **Find URLs to download.** Download managers can “sniff” your internet connection to find URLs that are difficult to locate or that web sites are trying to hide from you. Once you have the URL, then you can download the file. Web browsers cannot do this.
- **Backup files on a web server.** Download managers can be scheduled to download all the files on a web server so that regular backups can be made. Web browsers cannot do this.

- **Organize downloaded files on computer.** Download managers use folders and categories to help you organize your downloaded files on your computer, making it easy to find files at a later date. Web browsers cannot do this.
- **Fully integrated into you web browser.** Download managers integrate seamlessly into all popular web browsers – such as Internet Explorer, Firefox, Flock, Opera, Mozilla and Netscape. They take over your downloads for ultra-fast downloading, display quick access right-click menus and toolbars, and support drag and drop from your web browser.

## 4. Different types of download managers

There are over 100 download managers available today to choose from. All have their advantages and disadvantages, and it will come down to your personal preference what download manager suits you.

Your first decision will be the type of download manager that you choose – a file download manager or a multi-featured download manager.

### 4.1 File download managers

The majority of download managers are file download managers. That is, they assist you download a single file from the internet. Typical features include:

- Accelerated downloading.
- Resume broken downloads.
- Schedule downloads to start at a specific time.
- Maintain a list of usernames and passwords for sites.
- Maintain a list of sites to ignore when downloading.
- Display history of information about download activity.
- Organize downloaded files into categories.

File download managers are very useful and help you get programs, games, compressed files and documents from the internet. However, you will find that you will need more than this if you wish to download flash video, streaming audio and video, web sites, RSS feeds, podcasts, collections of files and other content that file download managers are not capable of handling. If just you have a file download manager, you may find that you will buy or use extra tools later on.

Popular single download managers are Orbit, Free Download Manager, GetRight, Download Accelerator Plus, FlashGet, Internet Download Manager, and Internet Download Accelerator.

### 4.2 Multi-featured download managers

Multi-featured download managers, such as DownloadStudio, take file download managers a step further. They have full file downloading capabilities, but also contain additional tools and features that let you download much more content from the internet.

DownloadStudio contains over 12 download tools and features:

- **File Downloader.** You can download files such as programs, games, compressed files and documents from web sites and ftp sites using a file downloader. All popular sites are supported – RapidShare, Megaupload, FileFront, YouSendIt, Download.com, and millions more.
- **Flash Video (FLV) Downloader.** It is extremely difficult to download Flash Video (.FLV) as it plays in your web browser. Using DownloadStudio, simply right-click on the web page and click "Download Video" to download any flash

video that is playing. All popular video sites are supported including YouTube, Google Video, Dailymotion, MySpace, Vimeo, Crackle, Metacafe and many more.

- **File Range Downloader.** You can download a collection of files based on numeric or alphabetic criteria. For example, you can download a series of photos like photo001.jpg, photo002.jpg, photo003.jpg ...photo100.jpg. This is particularly useful for downloading collections of full-sized photos from photo gallery sites.
- **Web Site Downloader.** You can download complete web sites for offline viewing on your computer without being connected to the internet. All content is downloaded from the web site for you to view. You can also choose to just download particular files from a web site. For example, you may just want to download all the large-sized JPEG images or all the programs from a web site.
- **Streaming Media Downloader.** You can download streaming audio and video directly from Windows Media Streaming and SHOUTcast servers without loss of quality. A direct connection is made to the streaming media server and the audio or video is downloaded and saved onto your computer so that you can play it back at anytime without being connected to the internet.
- **Streaming Audio and Video Capture.** You can capture (or record) any streaming audio and video as it plays on your computer in your web browser or media player. This enables you to save the streaming audio and video onto your computer using your preferred file format, and play it back anytime without being connected to the internet.
- **URL Sniffer.** One common problem when downloading content is to first find the URL of the content to download. Without the URL, you cannot download the file. A URL Sniffer is capable of watching all traffic between your computer and the internet. It finds all URLs that are sent or received and lists them for you, so that you can select the specific URL that you want. This is particularly useful for finding the URLs of flash video or streaming audio and video that is playing in your web browser or media player.
- **RSS Feed Reader.** You can subscribe to RSS feeds, blogs and podcasts on web sites. Feeds are downloaded and stored for viewing at anytime. Associated links can also be automatically downloaded for complete offline viewing. Podcasts and their enclosures (that is, music or video files) are automatically downloaded for storing into portable media players, such as an Apple iPod.
- **Flash (SWF) Capture.** It is extremely difficult to download Adobe Flash (.SWF) content from Internet Explorer and Internet Explorer-based browsers. Flash Capture makes saving flash easy. It adds right-click menus to your web browser and auto-detects Flash content so that you can download Flash files as you view them on a web page.
- **Web Site Explorer.** You can 'get-under-the-hood' of web sites and view all the links and images contained on a web site. Viewing this information greatly helps you discover the URLs on a web site and lets you choose the files that

you wish to download. The web site explorer can drill into HTML files, CSS files, SWF files and XML files looking for links and files that you can download.

- **Category Organizer.** Downloaded files are automatically organized into folders and categories. Using categories gives you the quickest access to all your files.
- **File Browser.** You can view any downloaded file on your computer using Windows Explorer or the integrated file browser. The file browser can display thumbnails of files for over 100 popular file formats, including all popular image formats and video formats. The Instant Viewer lets you view full-sized images and can play slideshows of your image collections. It's just like having IrfanView or ACDSee integrated into your download manager.

### 4.3 Criteria for choosing a download manager

Suggested criteria you should use when considering a download manager:

- **Feature set.** Does the download manager have a feature set for what you need to download today and what you need to download in the future? How does the feature set compare to other download managers?
- **Performance.** Does the download manager work properly? Does it download the content that you want? Does it integrate into your web browser? Does it crash or use too much memory?
- **Ease-of-use.** Is the download manager easy-to-use? Does it have an intuitive user interface? Do you think that you can learn to use it without difficulty or confusion?
- **Adware/Spyware/Malware.** Does the download manager have adware, spyware or malware? Are you putting your computer or privacy at risk?
- **Price.** Does the price of the download manager represent good value? How does the feature set compare with other download managers?
- **Documentation.** Does the download manager have adequate help files, tutorials and FAQs to explain how it works? Does the company keep the documentation up-to-date when releasing new versions?
- **Customer support.** Does the company respond to your inquiries promptly? Does the company resolve your problems?
- **Future enhancements.** Does the company provide regular updates to their download manager? Is there still active development of the download manager?

As a guide, download managers typically range in price from free to \$59.95. They all differ in features and ease-of-use. Some download managers are free – although be careful as some contain adware or spyware, or have fewer features, or provide little or no customer support or helpful documentation.

Tip: You should always apply the maxim of "you get what you pay for" when reviewing and choosing your download manager.

## 5. How download managers work

A download manager is a program that is installed onto your computer, and is designed to help you download content from the internet. It is typically integrated into your web browser – giving you quick access to features that assist you download files faster from the internet.

When downloading a file from the internet, a download manager assists you in three significant ways:

1. Accelerating the download speed, thus reducing the time taken to download a file.
2. Allowing you to resume a broken download, thus letting you re-start a download where it stopped.
3. Scheduling a download for a later time of day.

### 5.1 Accelerating downloads

A download manager can accelerate the downloading of a file using a technique called file-segmentation or file-splitting. Instead of downloading a file from the start to the finish with one connection to the web server, a download manager may open many connections and use each connection to download a part of the file. Once all parts of the file are downloaded, those parts are joined and the file download is complete. This technique can typically increase the speed of downloads by 500%. This technique works for all internet connections – including broadband connections.

Technical Note: File-segmentation or file-splitting is a faster approach to downloading as compared to a downloading with a single connection due to inherent congestion control in TCP. When downloading files from the internet, a download manager will open a TCP connection between your computer and the web server. By design, a TCP connection will not use all the available bandwidth of your internet connection, even if the web server is capable of sending data that fast. If the TCP connection were to hit the maximum bandwidth of your internet connection, the TCP connection would experience congestion and its congestion control would drop it back (for example, to 70% utilization).

In addition to TCP congestion control, congestion may be caused by other internet users accessing the same web server. This will drop the bandwidth used to download a file even further (for example, to 40% utilization).

Using this example, your internet connection is being utilized at 40%, so you have 60% of your internet connection that is not being used effectively. By opening up multiple TCP connections to download parts of the same file, you can reach and maintain the maximum bandwidth of your internet connection. This will download the file as fast as possible and push your internet connection to its maximum bandwidth.

### 5.2 Resuming downloads

Resuming a broken download is a very useful feature of a download manager. Downloading files from the internet can often fail for many reasons:

- Your internet connection becomes disconnected.

- The web server, where you are downloading the file from, fails for some reason.
- The connection between your computer and the web server is so slow that the connection times out.

When a download does fail, a download manager can keep track of how much data from the file has been downloaded so far and then re-connect to the web server and request only the remaining amount of the file – rather than starting from the beginning of the file again. When downloading large files, this can save significant bandwidth and time.

Technical Note: The ability to resume a download is dependent on the capabilities of the web server. Download managers will attempt to resume a download, but if the web server does not allow the delivery of file data from a specified offset, then the download manager will have to re-start the download from the beginning of the file. Most web servers allow delivery of file data from an offset, so in the majority of cases, download managers are able to resume broken downloads.

### **5.3 Scheduling a download for a later time of day**

Sometimes the internet can become congested or web site can become so busy that you are unable to download a file when you wish. Or, you may not want to download a file immediately and would rather download the file when you are not using your computer for other purposes.

Download managers allow you schedule you download for a later time of day. Some download managers, such as DownloadStudio, also allow you to create schedules so that you can download files at regular intervals such as daily, weekly or monthly. They also have the option to close the download manager or shutdown your computer once the download has completed. This makes downloading content from the internet very convenient.

### **5.4 Download managers and broadband connections**

There is a common misconception that internet users with broadband connections (cable, ADSL, wireless, etc.) do not need to use download managers. This is incorrect for several reasons:

- Download managers will provide much better download speeds than just downloading using your web browser – even on broadband connections. Remember that your fast broadband connection is really only from your computer to your internet service provider (ISP). Downloading files from sites located all around the world often means downloading from sites that are on slow or congested servers or are using slow or congested internet connections.
- Download managers will resume broken connections (remember, connections to slow web servers will still timeout or fail – even on a broadband connection!).
- Download managers help you get all types of content from the internet – such as flash video, streaming audio, streaming video, web sites, flash, RSS feeds, podcasts and more – which cannot be downloaded using your web browser.



## 6. Techniques for downloading content

When downloading content from the internet, there are proven methods to get specific content. Multi-featured download managers, such as DownloadStudio, support the following techniques:

### 6.1 Downloading a file

This is most common technique for downloading, and most download managers will download files without any major problems. However, files can still have some technical difficulties. Some common technical difficulties are:

- **Password-protection.** The file may require a user name and password. Download managers must be able to support authentication of the file so that it is permitted to download it from the web server. Two forms of authentication support are required – server-based authentication and session-based cookie authentication.
- **Redirection.** The URL used to download the file may redirect to another URL, which is the actual URL of the file. Download managers must be capable of handling this redirection and download the actual file.
- **Content Disposition.** The web server may use content disposition to rename the file to its correct name. Download managers must be capable of handling content disposition.
- **Connection limiting.** Web sites may limit the number of connections that you can make to the site (to reduce congestion) or may limit the number of splits (to reduce the impact of download managers). Download managers must be capable of storing rules for each web site so it adheres to the restrictions of the web site.
- **HTTP GET vs. HTTP POST downloading.** Web sites either use the regular HTTP GET method for downloading or may sometimes use HTTP POST method for downloading – especially where CAPTCHA images are used. Download managers must be capable of downloading using both these HTTP protocol methods.
- **HTTPS downloading.** Web sites may use the secure HTTPS protocol for accessing its files. Download managers must be capable of downloading using the secure HTTPS protocol.
- **FTP downloading.** Often files are located on FTP servers. Download managers must be capable of downloading files using the FTP protocol.

### 6.2 Downloading Flash Video (FLV)

Flash Video (.FLV) has become the most popular way to watch video clips on the internet – due to the popularity of web sites such as YouTube, Google Video, Dailymotion, MySpace, Vimeo, Crackle, Metacafe and many more.

Flash Video is not like a typical file on the internet that you can download. Flash Video is delivered to the Adobe Flash plugin in your web browser and, after playing, the packets of data are discarded.

Your web browser cannot save it onto your computer. DownloadStudio lets you right-click on a web page and click "Download Video" to download the Flash Video that is playing.

DownloadStudio can download Flash Video from any video site – including popular sites such as YouTube, Google Video, Dailymotion, MySpace, Crackle, Metacafe and many more.

### **6.3 Downloading streaming audio and video**

Streaming audio and streaming video is not like a typical file on the internet that you can download. Streaming media is delivered from streaming media servers using a special streaming protocol such as mms:// or rtsp://. The audio/video is sent down by the streaming media server as packets of data to your media player so that you can view and listen to the content. The packets of data are not saved anywhere on your computer after being played.

Download managers, such as DownloadStudio, that support streaming media servers can connect to these streaming media servers. They are capable of saving the packets of data into a file, so that the audio/video file can be played back at anytime without connecting to the internet.

DownloadStudio can download streaming media, live broadcasts and internet radio from Windows streaming media servers and SHOUTcast media servers.

Sometimes, web sites will refer to streaming meta-files instead of the actual streaming audio or video. For example, Windows media streaming audio and video may have an extension of .WAX, .WVX or .ASX. These URLs are Windows media meta-files. They are small XML files that describe the actual location of the streaming media (.WMA, .WMV or .ASF). Download managers, such as DownloadStudio, can automatically download and parse these meta-files and download the actual streaming audio or video for you.

Technical Note: Some streaming audio or video are live broadcasts from television stations or radio stations. They are unique in that they never finish, so they do not have a file size. Thus, they cannot be downloaded as normal streaming media. DownloadStudio can download or capture live broadcasts. When you have downloaded or captured as much of the live broadcast as you want, you can simply stop the downloading or recording (manually or after a pre-defined time) and the file will be saved on to your computer.

In addition to connecting to and downloading from streaming media servers, some DownloadStudio includes a capture tool that let you save the audio or video onto your computer as it plays on your computer. DownloadStudio Audio/Video Capture lets you to capture any streaming audio or video. As the audio is played on your computer, DownloadStudio can capture it directly from your audio card to get the best quality as possible. The video is captured directly from your web browser or media player. The audio and video are then combined into your preferred file format. This allows you to get streaming audio or video form any streaming servers – including Real Media servers, QuickTime servers and more.

## 6.4 Downloading a collection of files

Web sites that have many files often use file-naming conventions whereby they name their content using a series of numbers or letters. For example, a celebrity photo gallery site may name its 'Angelina Jolie' photos as `angelina_jolie001.jpg`, `angelina_jolie002.jpg`, `angelina_jolie003.jpg` ... `angelina_jolie125.jpg`. From this, you can see that they are just a series of photos numbered from 1 to 125.

Rather than having to do the tedious job of downloading each photo separately, the file range technique of downloading lets you enter the URL for one of the photos and then you can specify the file range for the download. In the above example, it may look like `angelina_jolie[001-125].jpg`. Download managers, such as DownloadStudio, that support file range downloading will download each file in the file range for you. This makes downloading collections of files extremely convenient and well suited to photo gallery sites or music sites.

## 6.5 Downloading a complete web site or parts of a web site

Download managers, such as DownloadStudio, that support web site downloading allow you to download a complete web site, or to download just certain files that match your criteria from a web site.

Downloading a complete web site allows you to view the web site offline without being connected to the internet. All files for the web site are downloaded and the site is fully functional. Downloading a complete site is often useful for offline browsing, or for research purposes, or for making regular backups of a web site.

Downloading certain files from a web site based on your criteria is a very powerful downloading technique. For example, it lets you get all images from a web site, or to get all PDF files from a web site, or to get all music from a web site, or to get all video from a web site. Download managers, such as DownloadStudio, let you specify the criteria that you would like to use when downloading files from a web site. These criteria can include file type, file size, file date, file location and more. For example, you may wish to download all videos that are larger than 500KB from a particular web server. This would allow you to get all the videos clips from a video web site.

An important feature for download managers that download web sites is the ability to find and download links in a web site. Web sites use many different types of web documents and these web documents often contain links and references to images, embedded objects and external links. The most widely-used web documents are HTML documents (`.HTML`, `.ASP`, `.PHP`, etc.) that describe the layout and content of a web page. Links and references can also be found in Macromedia Flash (`.SWF`) content, Cascading Style Sheet (`.CSS`) files, RSS feeds (`.XML`), playlists (`.M3U`) and more. DownloadStudio can find links in all these different types of web documents to ensure you get the complete web site downloaded onto your computer.

Technical Note: Downloading a web site is very similar to what a search engine bot such as Google or Yahoo does when it walks through a web site to find terms and keywords for its search engine results. As a download manager walks through a web site, it creates a sitemap of URLs that it finds. If a URL matches the criteria that you specify, the file is downloaded onto your computer.

## **6.6 Downloading Flash (SWF)**

Adobe Flash (.SWF) content can be difficult to download or save onto your computer. This is due to additional components (e.g. ActiveX controls) being used in your web browser to display Flash.

Download managers, such as DownloadStudio, let you right-click on Flash content on a web page in Internet Explorer and save the Flash content to your computer.

Technical Note: Some Flash content that appears on web pages may not be embedded into the web page. These are commonly called transparent flash content. DownloadStudio detects transparent flash content and can notify you. This lets you use the DownloadStudio Image/Flash Viewer in Internet Explorer to view all flash on the web page so that you can select and save them onto your computer.

## **6.7 Downloading RSS feeds and podcasts**

Many web sites and blogs now have RSS feeds so that visitors can keep up-to-date with the latest information about their favorite interests. Also, podcasts are a very popular way to listen to the latest music or watch the latest videos.

Download managers and RSS feed readers, such as DownloadStudio, let you subscribe to RSS feeds and read all the content from feeds. Download managers also let you download the all feed content onto your computer, so you can read the content offline without being connected to the internet.

Podcasts contain enclosure links to music files or video files. Download managers, such as DownloadStudio, can download these music and video files onto your computer so you can play them or transfer them to your portable media player, such as an Apple iPod.

DownloadStudio supports all the latest standards for downloading RSS feeds, blogs and podcasts including the RDF, RSS and ATOM protocols.

## **7. Integrating download managers into web browsers**

Download managers must integrate seamlessly into your web browser so that you can download content as you browse web sites.

DownloadStudio integrates into the latest versions of all popular web browsers – including Internet Explorer, Firefox, Flock, Opera, Mozilla and Netscape. In addition, DownloadStudio can be used with Internet Explorer-based browsers such as Avant Browser and Maxthon.

An important aspect when choosing a download manager is how well the download manager integrates into your web browser. Integration typically takes five forms:

- **Click monitoring**
- **Right-click menus**
- **Download toolbar**
- **Drag and drop support**
- **Download Flash Video (FLV)**
- **Download Flash (SWF)**

### **7.1 Click monitoring**

Click monitoring is the most fundamental feature for download managers when integrating into a web browser. When a user clicks on a download link in a web browser, the download manager must catch and take over the download. If it does not, then the web browser will download the file itself and you will miss all the benefits of the download manager.

When taking over a download in a web browser, the download manager must also use all the attributes of the download link to ensure the file is downloaded successfully – including HTTP referrer, HTTP user agent, cookie and HTTP method (GET vs. POST). DownloadStudio obtains all these attributes from web browsers so that download links work every time.

A download manager must also be able to let the internet users bypass the download manager and continue to use the web browser to process the click on a link. For example, you may wish to view a movie first before downloading it, or view a PDF file online in Acrobat instead of downloading it. Using DownloadStudio, if you hold down the SHIFT key while clicking on a link in your web browser, DownloadStudio will not process the click and leave it to the web browser.

Another important feature of click monitoring is to be able to easily turn on or off click monitoring in your web browser.

### **7.2 Right-click menus**

When viewing a web page in your web browser, you may find content on the page that you wish to download. Right-click context menus are a very convenient way to select the exact content that you wish to download.

DownloadStudio adds the following extra menu items to your web browser's right-click context menu:

- **Download Target.** Download the link associated with the text or image that you have right-clicked on.
- **Download Video.** Download the Flash Video (FLV) that is playing on the web page.
- **Download Image.** Download the image that you have right-clicked on.
- **Download Page.** Download the web page that you are viewing – including the HTML, images and text on the page.
- **Download Selection.** Download all the links in the selected text and images.
- **Download Site.** Download the entire web site.
- **Show Links.** Find and display all the links on the current page in DownloadStudio, so that you can select the content you wish to download.
- **Subscribe to RSS Feed.** Subscribe to and download the RSS feed on the current page.
- **Add Page to Scrapbook.** Take a snapshot of the current page and add it to the DownloadStudio Scrapbook category for offline reading.

### 7.3 Download toolbar

Adding a download toolbar into your web browser can give you quick access to features of a download manager. Toolbars can be turned on and off.

### 7.4 Drag and drop support

A very convenient method of downloading content from a web browser is to drag and drop text and image selections from your web browser into your download manager. These selections will contain links that you wish to download. Using DownloadStudio, a Drop Window has been specifically designed for drag and drop selections. By selecting the links on a web page and dragging them onto the DownloadStudio Drop Window, you can quickly download multiple files in one step. This makes it a very fast and convenient way to download.

### 7.5 Download Flash Video (FLV)

Downloading Flash Video (.FLV) from a web page is a very difficult task using your web browser, since Flash Video is streamed into an Adobe Flash plugin in your web browser and then discarded.

DownloadStudio has solved this problem by letting you simply right-click on the web page and click the "Download Video" menu item. DownloadStudio finds all the Flash Video and downloads them for you. This lets you download Flash Video from all popular video sites such as YouTube, Google Video, MySpace, Dailymotion, Crackle, Vimeo, Metacafe and many more.

## **7.6 Download Flash (SWF)**

Downloading or saving Adobe Flash (.SWF) content from a web page can be a very difficult task, since Flash is displayed in your web browser using additional components (e.g. ActiveX controls). DownloadStudio has solved this problem by enabling you to right-click on Flash content and save the Flash content to your computer.

DownloadStudio does this by adding extra menu items to the Macromedia Flash component in Internet Explorer.

In addition, you can use the DownloadStudio Image/Flash Viewer in Internet Explorer to find and display all Flash (SWF) content on a web page or all Flash (SWF) content in your Internet Explorer cache. This allows you to select the specific Flash (SWF) content that you wish to save onto your computer.

## **8. Summary**

With the increasing popularity of downloading content from web sites, internet users are wanting more content to download, more speed when downloading, and more control of their downloads. Download managers are software programs that solve all these problems.

Download managers provide many important benefits when compared to the normal method of downloading files using your web browser. These include accelerated downloading, resuming broken downloads, scheduled downloads and providing extra tools and features to download content that web browsers cannot download.

Download managers are used by millions of internet users every day. Like anti-virus software, they have quickly become a must-have utility for computer users.

When choosing a download manager, you should first consider what content you wish to download – since download managers are typically categorized as to what they can download. File download managers are excellent at downloading single files from web sites. Multi-featured download managers, such as DownloadStudio, take this further with extra tools and features that allow you to also download content such as streaming audio and video, collections of files, flash, complete web sites, RSS feeds, podcasts and more.

DownloadStudio is a multi-featured download manager that can download almost any content on the web today. It is easy-to-use and is constantly updated so you are always able to download the latest content from web sites.



## 9. About DownloadStudio



DownloadStudio is an award-winning, multi-featured download manager used by millions of internet users all over the world. It is designed to help you get any content from the internet. It contains more tools and features for downloading content than any other download manager.

DownloadStudio includes a file downloader, a file range downloader, a flash video downloader, a streaming media downloader, a web site downloader, a streaming media recorder, a web site explorer, an RSS & podcast downloader, a URL sniffer, a file browser, an RSS feed reader and more. All features are integrated into an easy-to-use and intuitive user interface. Extensive help and tutorials are included.

DownloadStudio can download files from almost any web site – including the most popular sites today: RapidShare, Megaupload, FileFront, YouSendIt, Youtube, Google Video, Dailymotion, MySpace, Crackle, Metacafe and millions more.

DownloadStudio integrates into the latest versions of all popular web browsers including Internet Explorer, Firefox, Opera, Flock, Mozilla and Netscape. It also works with Internet Explorer-based web browsers such as Avant Browser and Maxthon.

DownloadStudio has won numerous awards – including being awarded Editors' Choice as the best download manager by PC Magazine in 2004. With its innovative features, it continues to be the best-selling download manager in Japan.

DownloadStudio works on Windows Vista (64-bit and 32-bit), Windows XP (64-bit and 32-bit) and Windows 2000.

DownloadStudio contains NO adware, spyware or malware.

DownloadStudio can be purchased from the Conceiva web site for \$34.95.

A fully-featured, 15-day trial version of DownloadStudio can be downloaded from <http://www.downloadstudio.com>

For more information about DownloadStudio, visit <http://www.downloadstudio.com>



## 10. About Conceiva

Conceiva's vision is to create software products and technologies that help customers visualize solutions in the most creative and productive manner possible.



Conceiva uses its extensive range of software technologies and Internet technologies to create products that empower the creative consumer and creative professional.

Conceiva develops and sells a range of products under its own Conceiva brand - including DownloadStudio, ConvertHQ, ConvertHQ Premium, Mezzmo, SurfStream, NetRanger and Lightbox. These products can be downloaded and purchased from the Conceiva web site.

Conceiva also successfully develops and sells over 6 software products in Japan. In partnership with a leading software publisher, Jungle K.K. ([www.junglejapan.com](http://www.junglejapan.com)), its products are market leaders in their software categories and are used by millions of Japanese users.

Conceiva works with several major international companies to create private-labeled software products under their brands. One of these products - a web page authoring product - continues to be used by more than half a million users around the world. Another product - an internet software package - is used daily by hundreds of thousands of internet users.

Established in 2001, Conceiva consists of a committed team of creative professionals and software specialists. Conceiva is headquartered in Melbourne, Australia. Conceiva leverages its R&D facility in Tokyo, Japan to create innovative products and solutions.

Conceiva also has a strong presence in Europe working closely with its German-based partners - AKRA GmbH and Mobile Welten GmbH.

For more information, visit <http://www.conceiva.com>.

Contact Conceiva at [info@conceiva.com](mailto:info@conceiva.com).

---

© 2008 Conceiva Pty. Ltd. All Rights Reserved. Reproduction in whole or in part in any form or medium without express written permission is prohibited. Conceiva is a registered trademark. DownloadStudio is a registered trademark. All other trademarks contained herein are the property of their respective owners. Conceiva believes that the information in this publication is accurate as of its publication date; such information is subject to change without notice.